Assume this block pattern continues.

1. From left to right, what is the first number in Row 50? ________
2. What is the first number in the Row 100? ________
3. How many blocks are in Row 25? ________
4. What number is on the third block in Row 12? ________
5. What number is on the sixth block in Row 20? ________
6. What is the number on the last block in Row 9? ________
7. What is the second to last number in Row 13? ________
8. How much less is the fourth number than the fifth number in Row 15? ________
Name Game

Mary    David    Steven    Jackie
Age:___  Age:____  Age:____  Age:____

Rich    Shelly    Nancy    Fred
Age:____  Age:____  Age:____  Age:____

Use the clues. Fill in each person’s age.

1. Shelly: “The sum of my age and Nancy’s age is 40. The product of our ages is 300.”
2. David: “The product of my age and Mary’s age is 105. The difference in our ages is 8. I am older than Shelly.”
3. Fred: “The sum of my age and my grandfather’s age is 80. The difference in our ages is 64.”
4. Jackie: “The sum of my mother’s age and my age is 52. My mother was 24 years old when I was born.”
5. Rich: “The product of my age and my father’s age is 120. The difference in our ages is 26. Next year I’ll be starting school.”
6. Steven: “The product of my age and my grandmother’s age is 540. The sum of our ages is 69. My age is a single-digit number.”

CHECK: The sum of all the ages is 97.

In a Row

1. How many people can be seated when 10 square tables are put together in a straight line? Table tops are all the same size. Only one person may be seated at each side of a table. _______
2. How many people can be seated when 11 tables are put together? _______
3. How many people can be seated when 25 are put together? _______
4. How many people can be seated when 40 tables are put together? _______
5. How many people can be seated when 150 tables are put together? _______
6. Generalize the pattern. Use the variable “n” to stand for numbers of tables. When “n” tables are put together, how many people can be seated? _______
7. How many tables were put together to seat exactly 32 people? _______
8. How many tables were put together to seat exactly 64 people? _______
9. How many tables were put together to seat exactly 160 people? _______
MATCH MEASUREMENTS
Use the numbers on the signs to fill in the blanks. Numbers must fit the facts.

1. Height = _______ cm
   Width = _______ cm
   Length = _______ cm
   Volume = _______ cm³

   Hint: $h + w = 33$

2. Height = _______ cm
   Diameter = _______ cm
   Circumference = _______ cm
   Weight = _______ grams

   Hint: $C + h = 35.1$

3. Height = _______ cm
   Diameter = _______ cm
   Circumference = _______ cm
   Weight = _______ grams

   Hint: $C + h = 32$

4. Height = _______ cm
   Length = _______ cm
   Width = _______ cm
   Volume = _______ cm³
   Surface Area = _______ cm²

   Hint: $l + w = 36$

Composites
Composite numbers have 3 or more factors.

Between 1 and 100:
1. The least composite number is ________.
   It has ________ factors.
   It’s factors are ________.

   Between 1 and 50:
2. The greatest composite number is ________.
   It has ________ factors.
   Its factors are ________.

   3. The composite number with the greatest number of factors is ________.
   It has ________ factors.
   Its factors are ________.
Balzano is a puzzle that will tap into your logical reasoning abilities. Read the directions carefully, then try your hand at Balzano Shapes.

**Directions:**

Your job is to figure out the Desired Arrangement (the solution) of three elements (shapes) from clues that provide information about the shapes and their locations. The possible shapes are **circle, hexagon, square, trapezoid, and triangle**. No shape may be repeated.

The **Arrangement Column** shows sets of shapes in rows. In the Balzano puzzle below, the second row, arranged in order from left to right, is: trapezoid, hexagon, circle.

**Correct Shape in the Correct Place** identifies the number of elements that are the correct shape AND are in the right place. The second row has 1 shape in the right place.

**Correct Shape in the Wrong Place** identifies the number of correct shapes BUT in the wrong place. There are 2 of these in the second row.

**Incorrect Shape** identifies the number of shapes that do not belong in the arrangement. There are 0 of these in the second row.

<table>
<thead>
<tr>
<th>Arrangement</th>
<th>Correct Shape/Place</th>
<th>Correct Shape/ Wrong place</th>
<th>Wrong shape/ Wrong place</th>
</tr>
</thead>
<tbody>
<tr>
<td>△ □ □</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>O △ □</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>O O △</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>□ □ △</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
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<td>3</td>
<td>0</td>
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